PATENT

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for

APPARATUSES USEFUL FOR WATERING PETS

by

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CROSS-REFERENCE(S) TO RELATED APPLICATION(S)

This application claims priority to U.S. Provisional Patent Application Serial No. 60/437,673, filed January 2, 2003, the entire contents of which are expressly incorporated by reference.

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates generally to devices from which pets can drink. More particularly, it relates to a liquid flow cap that can be attached to a container, such as a standard water bottle, so that pets can drink liquid flowing from the container.

2. Description of Related Art

Conventional pet watering devices generally fall into categories of bowls, tanks, and lick systems. Most of these devices provide for the storage of water as well as access by pets to the water.

Bottled water has become popular. Many stores offer bottles that contain a few ounces of water and that are conveniently designed for individual use. Many drinks besides water can be purchased in the same types of containers. Energy drinks, fruit juices, soft drinks, and others can all be obtained in bottles that are generally plastic and provided with screw tops of some kind.

SUMMARY OF THE INVENTION

The present invention comprises an apparatus that can be attached to a container that carries liquid – such as a standard water bottle – such that pets can effectively drink from the container. As a result, the present apparatuses allow for existing water bottles and other fluid containers to be converted into pet fluid storage containers.

One embodiment of the present apparatuses comprises an apparatus attachable to a container useful for watering an animal. The apparatus includes a base cap removably attachable to the container. The base cap has a base cap flow aperture. The apparatus also includes a flow activation member removably attachable to the base cap. The flow activation member has a triggering mechanism and a flow activation member flow aperture. Other embodiments, and details associated with those embodiments, are described below.

It is anticipated that most of the liquid containers to which the present apparatuses can be attached will be water bottles with threaded tops. The present apparatuses can be used to replace the caps that are otherwise sold with such bottles. Attachment mechanisms other than threads also may be used on such bottles. The base caps of the present apparatuses can be configured to work with such attachment mechanisms. Once one of the present apparatuses is attached to a liquid container, a pet can activate the apparatus to start the flow of liquid. In one embodiment, the activator, or triggering mechanism, is a lever that extends away from the bottle. It is anticipated that a pet will lick the lever, causing one or more apertures in the apparatus to open, and allowing liquid to flow from the container. An outer cap also may be used that will allow a human user to place the apparatus in an activated state, or a deactivated state.

BRIEF DESCRIPTION OF THE DRAWINGS

The following drawings illustrate by way of example and not limitation. The use of identical reference numerals does not necessarily indicate an identical structure. Rather, the same reference numeral may be used to indicate a similar feature or a feature with similar functionality. Reference numerals should not be used to construe the claims.

FIG. 1 is an exploded perspective view of one embodiment of the present apparatuses.

FIG. 2 is a side view of the embodiment of the present apparatuses shown in **FIG. 1**.

FIG. 3 is a top view of the embodiment of the present apparatuses shown in **FIG. 1**.

FIG. 4 is a perspective view showing of the embodiment of the present apparatuses shown in **FIG. 1** attached to a container (e.g., a bottle).

DETAILED DESCRIPTION OF ILLUSTRATIVE EMBODIMENTS

The terms "comprise" (and any form of comprise, such as "comprises" and "comprising"), "have" (and any form of have, such as "has" and "having"), and "include" (and any form of include, such as "includes" and "including") are open-ended linking verbs. As a result, an apparatus that "comprises," "has," or "includes" one or more elements possesses those one or more elements, but is not limited to possessing only those one or more elements. Likewise, an element of an apparatus that "comprises," "has," or "includes" one or more features possesses those one or more features, but is not limited to possessing only those one or more features.

Thus, and by way of example, an apparatus that is attachable to a container useful for watering an animal, the apparatus "comprising" a base cap removably attachable to the container, the base cap having a base cap flow aperture; and a flow activation member removably attachable to the base cap, the flow activation member having a triggering mechanism and a flow activation member flow aperture, is an apparatus that has, but is not limited to having only, such a base cap and such a flow activation member. That is,

the apparatus possesses at least the recited base cap and flow activation member, but does not exclude other elements or features that are not expressly recited, such as, for example, an outer cap. Likewise, the recited base cap, for example, may also possess unrecited features, such as additional base cap flow apertures.

The terms "a" and "an" are defined as one or more than one unless this disclosure explicitly requires otherwise.

FIG. 1 illustrates one embodiment of the present apparatuses. Liquid flow cap **100** includes base cap **10**. Base cap **10** includes an attachment section **12** and an extension member **14**, both of which can be cylindrical in shape, as shown. Attachment section **12** and extension member **14** also can both be hollow. Attachment section **12** may be threaded such that base cap **10** can be removably attached to a container that is provided with a threaded top. "Removably attachable" is defined such that a first device that is "removably attachable" to a second device can be attached to the second device and then removed from it without breaking or destroying the utility of either the first or second device. In other embodiments, base cap **10** may be provided with an attachment mechanism other than a thread in order to best suit the container to which the base cap will be attached.

Base cap **10** also includes top **18** and a base cap flow aperture **16**. More particularly, top **18** of base cap **10** includes multiple base cap flow apertures **16** that have any suitable shape. When the embodiment of base cap **10** shown in **FIG. 1** is removably attached to a container, fluid can flow from the container through base cap flow apertures **16**. Base cap **10** can be made from any suitable material – such as polymer (e.g., plastic or a plastic-like material) or metal – and can be generally rigid.

Liquid flow cap **100** also includes flow activation member **20** that is removably attachable to base cap **10**. One way in which flow activation member **20** may be removably attached to base cap **10** is through the use of outer cap **30**, discussed in more detail below. The depicted embodiment of flow activation member **20** includes a sealing member **22** that is cylindrical in shape and configured (e.g., sized) to fit snugly over a portion of base cap **10**, namely extension member **14**. By virtue of such a fit and the material properties of flow activation member **20**, liquid should not be able to flow through base cap flow apertures **16** and then leak out between extension member 14 and sealing member **22**.

Flow activation member **20** also includes triggering mechanism **24**, which is a lever in this embodiment. Lever **24** includes a base **26** at which it is attached to (in this case integrally with) sealing member **22**, and a tip **28**. Lever **24** is cylindrical in shape (although any suitable shape may be used) and extends outwardly from sealing member **22** and base cap **10**. Lever **24** may be hollow or solid. An axis **40** is substantially centered in lever **24** and the remainder of liquid flow cap **100**. This embodiment of flow activation member **20** also includes a washer **25** that extends from sealing member **22** and surrounds lever **24**. Washer **25**, lever **24**, and sealing member **22** all may be integrally formed from a unitary piece of material.

Flow activation member **20** also includes one or more flow activation member flow apertures **27** (e.g., slots, and visible in **FIG. 3**) positioned between lever **24** and washer **25**. In this embodiment, the flow activation member flow apertures are positioned in sealing member **22**. The flow activation member flow apertures are substantially sealed when lever **24** is in a deactivated position (i.e., the centered position

shown in **FIG. 1**). The term "substantially" is defined as at least close to (and can include) a given value or state (preferably within 10% of, more preferably within 1% of, and most preferably within 0.1% of). Such sealing may be achieved by making the apertures slits or narrow slots, and by virtue of the elastic properties of the material from which flow activation member **20** is made.

The flow activation member flow apertures can be positioned in flow activation member **20** such that, when outer cap **30** is not used or in an activated positioned, more liquid can pass through them when lever **24** is in an activated positioned (e.g., flexed – disposed to one side, or pushed off center) than when lever **24** is in its deactivated position. For example, when outer cap **30** is an activated position and lever **24** is then activated, liquid can flow through base cap flow apertures **16** and through flow activation member flow apertures **27**. Further, the liquid may flow along lever **24** by virtue of surface tension, thus helping to deliver the liquid in a controlled fashion to the pet. When the lever returns to its normal, or deactivated position, the flow activation member flow apertures are sealed, inhibiting the flow of liquid. Flow activation member **20** may be made from rubber, or a rubber-like material.

Liquid flow cap **100** may also include outer cap **30**, which is cylindrical in shape in this embodiment and removably attachable to base cap **10**. Outer cap **30** is configured to fit over at least a portion of base cap **10** (in the embodiment shown, that portion includes both a portion of attachment section **12** and extension member **14**) and a portion of flow activation member **20** (in the embodiment shown, that portion includes all of flow activation member **20**). Outer cap **30** has lever aperture **32** through which lever **24** can pass (see, e.g., **FIGS. 2** and **3**). Lever aperture **32** is defined by shoulder **34**, which

projects inwardly from an upper portion of outer cap **30**. In this embodiment, shoulder **34** is recessed from top edge **35** of outer cap **30**.

The removable attachability between outer cap **30** and base cap **10** may be achieved by providing base cap **10** with a tab snap assembly **11** (which includes one or more male tab snaps) and one or more stop tabs **13**. The inner surface of outer cap **30** may be configured to work with (e.g., engage) tab snap assembly **11** and stop tabs **13**. Moreover, that configuration may be such that outer cap **30** is capable of having an outer cap deactivated position and one or more outer cap activated positions. Shoulder **34** can be urged against washer **25** of flow activation member **20** in order to close flow activation member flow apertures **27** despite movement of lever **24**. When base edge **36** of outer cap **30** is moved away from a container to which base cap **10** is removably attached, and shoulder **34** is positioned so as not to contact washer **25**, flow activation member flow apertures **27** are free to open when lever **24** is activated. Thus, when outer cap **30** is in an outer cap activated position, lever **24** can be moved by a pet and liquid can flow from the container through the base cap flow apertures and flow activation member flow apertures to the pet. If the outer cap is in the outer cap deactivated position, shoulder **34** is urged against washer **25** and liquid is not allowed to flow out of the container. Outer cap **30** can be made of any suitably rigid material, such as plastic or a plastic-like material.

FIG. 2 is a side view of an embodiment of liquid flow cap **100**, showing outer cap **30** removably attached to base cap **10** and positioned over portions of base cap **10** and flow activation member **20**.

FIG. 3 is a top view of an embodiment of liquid flow cap **100**, and shows the orientation of outer cap **30**, shoulder **34** of outer cap **30**, washer **25** of flow activation member **20**, and flow activation member flow apertures **27** of flow activation member **20**.

FIG. 4 illustrates an embodiment of liquid flow cap **100** removably attached to a container **200** that is useful for watering an animal. In this embodiment, container **200** is a standard water bottle.

With the present apparatuses, pets can be watered in a number of situations conveniently. For example, a user may engage in some form of physical activity such as jogging or biking, take a water bottle with liquid flow cap **100** removably attached to it, and be able to water an accompanying pet when desirable. The outer cap can be used to assure the user that the contained liquid will not accidentally be lost during the activity. In order to use the liquid flow cap, the user can move the outer cap to an activated position and extend the bottle to the pet. Once the pet is aware of its ability to obtain water or other liquid from the bottle by licking or otherwise moving the lever, it can do so whenever given a chance by the user.

It should be understood that the present apparatuses are not intended to be limited to the particular forms disclosed. Various modifications of the disclosed embodiments, as well as alternative embodiments of the present apparatuses, will become apparent to persons of ordinary skill in the art upon reference to the description above. The present apparatuses are to cover all modifications, equivalents, and alternatives falling within the scope of the claims. Furthermore, the claims are not to be interpreted as including means-plus- or step-plus-function limitations, unless such a limitation is explicitly recited in a given claim using the phrase(s) "means for" or "step for," respectively.